

McMurdo (from page 25)

McMurdo onto LTO tapes. These LTO tapes can be sent to the Radarsat data facility, overnight if desired, to allow faster delivery of the data to Alaska. Normally, data to the Alaska facility from McMurdo is delayed for months when the McMurdo Station is inaccessible during the Antarctic winter.

Also, as part of this demo, direct broadcast data from Terra and Aqua can be downlinked to MGS to the high-speed telemetry system at McMurdo and hand-carried (via LTO tapes) to a new science computer located at McMurdo. This computer will process the raw data and convert it to science data products (jpegs, etc.) for the local science community at McMurdo. Additionally, these files can be hand-carried back to the high-speed telemetry system for playback into MTRS2 for relay to the US. Since the Internet bandwidth out of McMurdo is very

limited, the MTRS2 system can relay high-volume data to WSC for the science community. Special applications written for both telemetry systems at MGS and WSC will allow the transfer of high-volume telemetry data or computer files (science data files) via TDRS to WSC. Once at WSC the data can be delivered to the customer by LTO tape or DVD.



**McMurdo Ground Station**

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This demonstration will last from January to September 2004. After this time, the activity will become operational if it proves beneficial to operations and customers.

If you have any questions, don't hesitate to contact Mike Comberiate, email:

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## The NASA Satellite Laser Ranging Network

Satellite Laser Ranging (SLR) is a fundamental measurement technique used by the NASA Space Geodesy Program to support both national and international programs in Earth dynamics, ocean and ice surface altimetry, navigation and positioning, and technology development. SLR uses lasers to make precise measurements of the range between a SLR ground station and a retro-reflector equipped satellite to millimeter level. The SLR technique was first developed by NASA's GSFC in the early 1960's as a tool for precision orbit determination and validation of radio tracking techniques. NASA has built five trailer-based Mobile Laser Ranging Stations (MOBLAS) that have remained in operation at fixed sites for over fifteen years. Two highly compact Transportable Laser Ranging Systems (TLRS), built by NASA, also remain in operations. The University of Hawaii and the University of Texas continue to operate the two high-performing Observatory SLR systems at their respective

Universities. The University of Texas system also has lunar ranging capability.

One of the key elements of the NASA SLR program is the establishment of overseas partnerships to improve the global distribution of SLR stations (see Table 1). NASA continues its successful partnerships with the Geoscience Australia (formerly Australian Surveying & Land Information Group [AUSLIG]) in Yarragadee, Australia (MOBLAS-5); the South African National Research Foundation/Hartelbeesthoek Radio Astronomical Observatory (HRAO) in Hartelbeesthoek, South Africa (MOBLAS-6); and the University of French Polynesia/CNES in Tahiti, French Polynesia (MOBLAS-8). Under these partnerships, NASA continues to provide the SLR system, training, engineering support, and spare parts to maintain operations. The host country provides the site, local infrastructure, and the operating crew.

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